CM17110
Super VGA + Flat Panel utilityModule
User's manual

&

CM17120
Super VGA + DVI utilityModule
User's manual

BDM-610020009
Rev. B

ISO9001 and AS9100 Certified

CM17110 Super VGA + Flat Panel
&
CM17120 Super VGA + /DVI
User's Manuals

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Chapter 1. Introduction

This manual gives information on the CM17110 and CM17120 Super VGA utilityModuless. This utilityModules and drivers provide support for additional features of your PC, such as greater speed, higher resolution, and more available colors. These modules support: Super VGA CRT interface and Flat panel interfaces.

The CM17110 Super VGA + Flat Panel and CM17120 Super VGA + DVI utilityModules were designed to assist display to support RTD's PC/104-*Plus* CPU modules and other standard PC/104-*Plus* processor modules.

1.1. Features

The following are major features of the CM17110/CM17120 Super VGA utilityModules.

- 32-bit Hardware graphics-accelerator
- Linear memory addressing
- Hardware cursor
- Windows NT, Windows 2000 and Windows 95/98 drivers
- Plug and play hardware configuration (PCI 2.1 compatible)
- Embedded 4 Mbyte SDRAM memory
- 83 MHz SDRAM operation
- Integrated Clock Synthesizers
- 170 MHz RAMDAC
- 83 MHz Memory Clock with PLL
- Dual Independent Display
- Different or same image CRT and Flat Panel
- Independent display timing and resolution for CRT and Flat Panel
- HiQColorTM Technology implements TMED on STN displays:
- up to 16.7 Million colors
- Flash-Programmable User Video BIOS

Super VGA CRT interface:

- Single view resolution up to 1600x1200 pixels with 64K colors
- Dual Independent Display Mode up to 1280x1024 with 256 color
- Up to 16,7 million colors
- Resolution support for: VGA, SVGA, XGA, SXGA, UXGA

Advanced Flat-panel interface: (CM17110)

- Support passive and active colors, monochrome, EL and plasma displays
- Resolution up to 2048x1024 pixels
- Up to 16 million colors
- Power switching and sequencing
- Variable bias voltage supply

Standard DVI interface: (CM17120)

- Resolution up to 2048x1024 pixels

- Supports DVI-A and DVI-D monitors

Low power-consumption:

- 2W typical from single (+5V power supply)

Software Included:

- Drivers for Windows 95/98, Windows NT 4.0 / 2000 / XP
- Flash BIOS Programming Utility
- BIOS version for Flat Panels

Dual Multimedia Accelerator Engines

- Color Space Conversion (YUV 422-RGB)
- Horizontal and Vertical Interpolation
- Double buffering support for YUV and 15/16 RGB
- Color Key Video Overlay

Standards Supported

- Fully IBM VGA Compatible
- VESA DPMS and DDC1/2
- Advanced Power Management
- ACPI Compliant

1.1. Recommended Cables

To allow maximum flexibility, cables are not included with the CM17110/CM17120. We offer a ready-made cable kit for the module, which may be purchased separately. CM17110/CM17120 uses cable kit XK-CM37, which contains:

- VGA monitor cable (DIL10 to DSUB15)

1.2. General specifications

- Dimensions: 96x96x24 mm including connectors

Operating conditions

- Temperature: -40 to +85 degrees C
- Relative humidity: 0-95% non condensing
- Storage temperature: -55 to +85 degrees C

Chapter 2. Configuring the CM17110/CM17120 utility Modules

The following sections contain information on configuring the CM17110/CM17120 utilityModules. Please read the entire section before attempting to use the utilityModules!

1.3. PCI board selector (RSW1)

Since the utilityModules uses stack through buses, the only hardware installation you will do is to place the module onto the PC/104-*Plus* stack. To do this, you will connect the ISA or PCI bus connectors.

Before you can use this module you have to set the PCI board selector rotary switch located on the board (RSW1). If this module is the first from the CPU module select ’0’, if the second select ’1’, etc.

1.4. Recommended procedure

We recommend you follow the procedure below to ensure the stacking of the modules does not damage connectors or electronics.

- Turn off power to the PC/104-Plus system or stack.
- Select and install standoffs to properly position the utilityModules on the PC/104-Plus stack.
- Touch a grounded metal part of the stack to discharge any buildup of static electricity.
- Remove the utilityModules from its anti-static bag.
- Check to see if the keying pins in the PCI bus connector are properly positioned.
- Check the stacking order and set the PCI selector rotary switch.
- Hold the utilityModules by its edges and orient it so that the bus connector pins line up with the matching connector pins on the stack.
- Gently and evenly press the utilityModules onto the PC/104Plus stack.

CAUTION: Do not force the module onto the stack! Wiggling the module or applying too much force may damage it. If the module does not readily press into place, remove it, check for bent pins or out-of-place keying pins, and try again.

Chapter 3. Chapter 3 Connecting the utilityModules (CM17110)

The following sections describe connectors of the CM17110 Super VGA utilityModules.

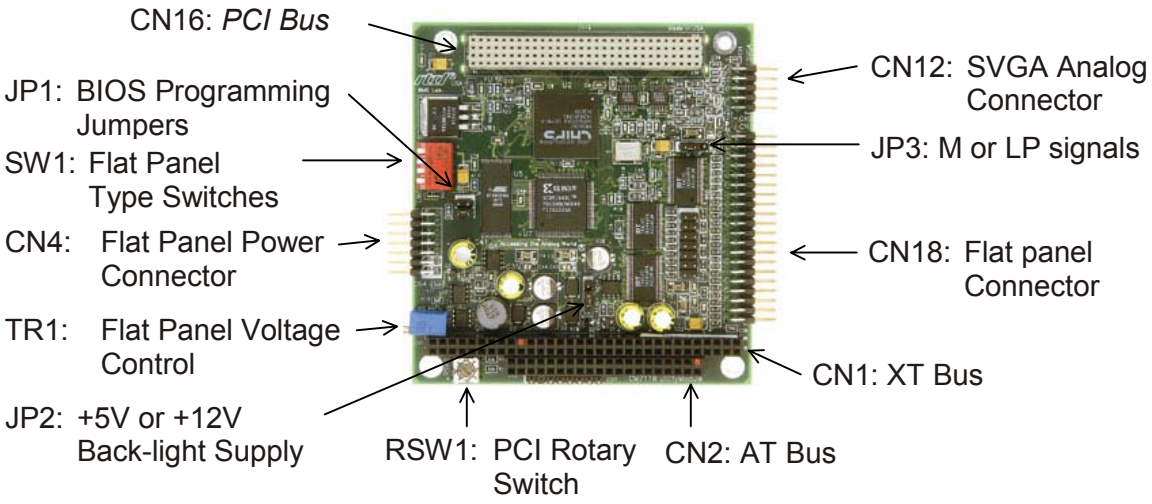
3.1. Finding Pin 1 on the Connectors

A square solder pad visible on the bottom of the PC board indicates pin 1 on the connectors.

3.2. Component locations

The figure below shows locations of major components, including connectors.

CM17110


CN16: *PCI Bus*
JP1: BIOS Programming Jumpers
SW1: Flat Panel Type Switches
CN4: Flat Panel Power Connector
TR1: Flat Panel Voltage Control
JP2: +5V or +12V Back-light Supply
RSW1: PCI Rotary Switch
CN2: AT Bus
CN1: XT Bus
CN18: Flat panel Connector
JP3: M or LP signals
CN12: SVGA Analog Connector

3.3. Connectors

Connector	Function	Dimension
CN5	SVGA analog output	10 pin
CN3	Flat panel output	40 pin
CN6	Flat panel extension	14 pin
CN4	Flat panel Power Connector	12 pin
CN2, CN1	AT/XT bus[1]	64+32 pin
CN16	PCI bus	120 pin
JP1	BIOS programming jumper	4 pin
JP2	+5V or +12V backlight supply	3 pin
JP3	M or LP signals output	3 pin
RSW1	PCI rotary switch	Rotary switch
SW1	Flat panel type switches	4 DIP switches
B1	VEE voltage select	Solder blob
TR1	Flat panel voltage control	Trimmer

3.4. Fuses

Fuse	Value	Value and signal	Connector
F1	2A	VBLKSW	CN18 (2)
F2	2A	VDDSW	CN18 (1)
F3	1A	-VEE	CN18 (5)
F4	1A	+VEE	CN18 (3)
F5	1A	+5V	CN12 (3)

[1] Not used for the operation of the utilityModules. Used only to pass through ISA signals for other board on the stack.

3.5. Connector pinouts

SVGA Video Connector, CN5			
DIL Pin	**Signal**	**Function**	**DB15 Pin**
1	VSYNC	Vertical sync	14
2	HSYNC	Horizontal sync	13
3	DDC CLK	Power supply	15
4	RED	Red signal	1
5	DDC DATA	Monitor detect	12
6	GREEN	Green signal	2
7	+5V	Clock	9
8	BLUE	Blue signal	3
9	GND	Ground	5, 6, 7
10	GND	Ground	10, 8
	NC	No Connect	4, 11

Shown another way, the pinout of this connector (facing the pins) is:

1	VSYNC	HSYNC	2
3	DDC CLK	RED	4
5	DDC DATA	GREEN	6
7	+5V	BLUE	8
9	GND	GND	10

Note: In our XK-CM37 cable kit, not all ground pins of the DB15 VGA connector are wired to the utilityModules. In a very few cases, a particular monitor will require all ground pins to be connected. In these case, it will be necessary to use a cable with all ground signals connected to the utilityModules.

Note: High-resolution video uses very high-speed signals. For optimum video performance, you should use a short video cable between the module and VGA connector and provide a low-impedance ground between your system and the VGA connector

3.6. Flat Panel Power, CN4

CN4 is a 12-pin DIL connector, which provides power, and control signals which may be used when interfacing a Flat Panel display. The pinout of this connector:

Flat Panel Power Connector (CN20)			
DIL Pin	**Signal**	**Function**	**in/out**
1	ENAVDD	Enable Panel Vdd	out
2	ENABKL	Enable Panel	out
3	ENAVEE	Enable Panel Vee	out
4	GND	Ground	-
5	+5Vdc	Power supply	-
6	+5Vdc	Power supply	-
7	GND	Ground	-
8	GND	Ground	-
9	+12Vdc	Power supply	-
10	-12Vdc	Power supply	-
11	GND	Ground	-
12	GND	Ground	-

Shown another way, the pinout of this connector (facing the pins) is:

1	ENAVD	ENABKL	2
3	ENAVEE	GND	4
5	+5V	+5V	6
7	GND	GND	8
9	+12V	-12V	10
11	GND	GND	12

Note: The +5V, +12V and –12V pins are connected to the PC/104*Plus* bus and power supply connector. These voltages are not generated on the utilityModules.

3.7. Flat Panel Interface, CN3

CN3 is a 40-pin DIL connector which provides signals to connect Flat Panel Displays.

Flat Panel Interface Connector (CN3)			
DIL Pin	**Signal**	**Function**	**Note**
1	VDDSW	Switched Panel Vdd	
2	VBKLSW	Switched Backlight supply	1
3	Vee(+)	Positive Panel Bias	2
4	Vee(-)	Negative Panel Bias	2
5	ENABKL	Backlight Enable signal	
6	GND		
7	M(Data Enable)	Modulation clock	
8	Blank*/DE	Blank/Display enable	3
9	GND		
10	LP (HSync)	Latch pulse	
11	FLM (VSync)	First line marker	
12	GND		
13	SHFCLK	Shift clock	
14	GND		
15	PNL0	Panel 0	4
16	PNL1	Panel 1	4
17	PNL2	Panel 2	4
18	PNL3	Panel 3	4
19	PNL4	Panel 4	4
20	PNL5	Panel 5	4
21	PNL6	Panel 6	4
22	PNL7	Panel 7	4
23	PNL8	Panel 8	4
24	PNL9	Panel 9	4
25	PNL10	Panel 10	4
26	PNL11	Panel 11	4
27	PNL12	Panel 12	4
28	PNL13	Panel 13	4
29	PNL14	Panel 14	4
30	PNL15	Panel 15	4
31	GND		
32	PNL16	Panel 16	4
33	PNL17	Panel 17	4
34	PNL18	Panel 18	4
35	PNL19	Panel 19	4
36	PNL20	Panel 20	4
37	PNL21	Panel 21	4
38	PNL22	Panel 22	4
39	PNL23	Panel 23	4
40	GND		

Notes: 1. VBKLSW can provide switched +5Vdc or +12Vdc, as selected by jumper JP2.
2. The magnitude of bias voltages Vee(+) and Vee(-) are adjusted by trimpot TR1
3. The Blank*/DE pin may be connected to either M or LP signals from the VGA controller by positioning jumper JP3
4. Flat panel RGB bit numbering please refer to Chips&Tech datasheet

3.8. Flat Panel Interface Extension, CN6

CN6 is a 14-pin DIL connector which provides additional signals to connect Flat Panel Displays.

Flat Panel Interface Extension Connector (CN19)			
DIL Pin	**Signal**	**Function**	**Note**
1	GND		
2	PNL24	Panel 24	4
3	PNL25	Panel 25	4
4	PNL26	Panel 26	4
5	PNL27	Panel 27	4
6	PNL28	Panel 28	4
7	PNL29	Panel 29	4
8	PNL30	Panel 30	4
9	PNL31	Panel 31	4
10	PNL32	Panel 32	4
11	PNL33	Panel 33	4
12	PNL34	Panel 34	4
13	PNL35	Panel 35	4
14	GND		

3.9. Flat panel bit configurations

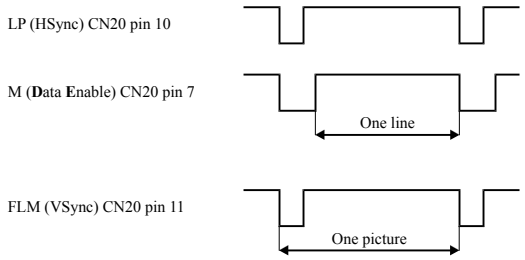
Panel bit number	Mono	Mono	Mono	Color	Color	Color	Color	Color	Color	Color	Color	Color
	SS	DD	DD	TFT	TFT	TFT	TFT-HR	STN-SS	STN-SS	STN-DD	STN-DD	STN-DD
	8 bit	8 bit	16 bit	9/12/16 bit	18/24 bit	36 bit	18/24 bit	8 bit 4 bP	16 bit 4 bP	8 bit 4 bP	16 bit 4 bP	24 bit
PNL0	D0	UD3	UD7	B0	B0	FB0	FB0	R1	R1	UR1	UR0	UR0
PNL1	D1	UD2	UD6	B1	B1	FB1	FB1	B1	G1	UG1	UG0	UG0
PNL2	D2	UD1	UD5	B2	B2	FB2	FB2	G2	B1	UB1	UB0	UB0
PNL3	D3	UD0	UD4	B3	B3	FB3	FB3	R3	R2	UR2	UR1	LR0
PNL4	D4	LD3	UD3	B4	B4	FB4	SB0	B3	G2	LR1	LR0	LG0
PNL5	D5	LD2	UD2	G0	B5	FB5	SB1	G4	B2	LG1	LG0	LB0
PNL6	D6	LD1	UD1	G1	B6	SB0	SB2	R5	R3	LB1	LB0	UR1
PNL7	D7	LD0	UD0	G2	B7	SB1	SB3	B6	G3	LR2	LR1	UG1
PNL8			LD7	G3	G0	SB2	FG0		B3		UG1	UB1
PNL9			LD6	G4	G1	SB3	FG1		R4		UB1	LR1
PNL10			LD5	G5	G2	SB4	FG2		G4		UR2	LG1
PNL11			LD4	R0	G3	SB5	FG3		B4		UG2	LB1
PNL12			LD3	R1	G4	FG0	SG0		R5		LG1	UR2
PNL13			LD2	R2	G5	FG1	SG1		G5		LB1	UG2
PNL14			LD1	R3	G6	FG2	SG2		B5		LR2	UB2
PNL15			LD0	R4	G7	FG3	SG3		R6		LG2	LR2
PNL16					R0	FG4	FR0					LG2
PNL17					R1	FG5	FR1					LB2
PNL18					R2	SG0	FR2					UR3
PNL19					R3	SG1	FR3					UG3
PNL20					R4	SG2	SR0					UB3
PNL21					R5	SG3	SR1					LR3
PNL22					R6	SG4	SR2					LG3
PNL23					R7	SG5	SR3					LB3
PNL24						FR0						
PNL25						FR1						
PNL26						FR2						
PNL27						FR3						
PNL28						FR4						
PNL29						FR5						
PNL30						SR0						
PNL31						SR1						
PNL32						SR2						
PNL33						SR3						

PNL34						SR4						
PNL35						SR5						
Pixels/ Clock	8	8	16	1	1	2	2	2-2/3	5-1/3	2-2/3	5-1/3	8

Note: R=red, G=green, B=blue, U=upper, L=lower, F=first, S=second

3.10. Flat panel signal information

The following diagram shows the flat panel interface synchronization signals.



3.11. Jumpers and Switches

JP1	
Pin	**Description**
1-2	User VGA BIOS*
3-4	Factory BIOS (32KB)

JP2	
Pin	**Description**
1-2	Back light supply +12Vdc*
2-3	Back light supply +5Vdc

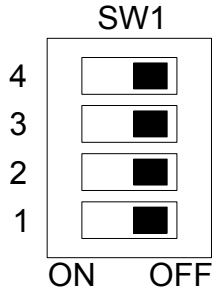
JP3 (Blank/Display enable select)	
Pin	**Description**
1-2	M signal from the VGA controller CN3 pin 8 connected to pin 7*
2-3	LP signal from the VGA controller CN3 pin 8 connected to pin 10

* Factory default

SW1					
#	**4**	**3**	**2**	**1**	**Flat panel type description**
1	ON	ON	ON	ON	1024x768 Dual Scan STN Color
2	ON	ON	ON	OFF	1280x1024 TFT Color
3	ON	ON	OFF	ON	640x480 Dual Scan STN Color
4	ON	ON	OFF	OFF	800x600 Dual Scan STN Color
5	ON	OFF	ON	ON	640x480 Sharp TFT Color
6	ON	OFF	ON	OFF	640x480 18-Bit TFT Color
7	ON	OFF	OFF	ON	1024x768 TFT Color
8	ON	OFF	OFF	OFF	800x600 TFT Color
9*	OFF	ON	ON	ON	800x600 TFT Color
10*	OFF	ON	ON	OFF	800x600 TFT Color
11*	OFF	ON	OFF	ON	800x600Dual Scan STN Color
12*	OFF	ON	OFF	OFF	800x600Dual Scan STN Color
13*	OFF	OFF	ON	ON	1024x768 TFT Color
14*	OFF	OFF	ON	OFF	1280x1024 Dual Scan STN Color
15*	OFF	OFF	OFF	ON	1024x600 Dual Scan STN Color
16*	OFF	OFF	OFF	OFF	1024x600 TFT Color

* Available only in large BIOS (>32K)

DIP switch SW1 layout: (all switch in OFF position)



Chapter 4. Connecting the utilityModules (CM17120)

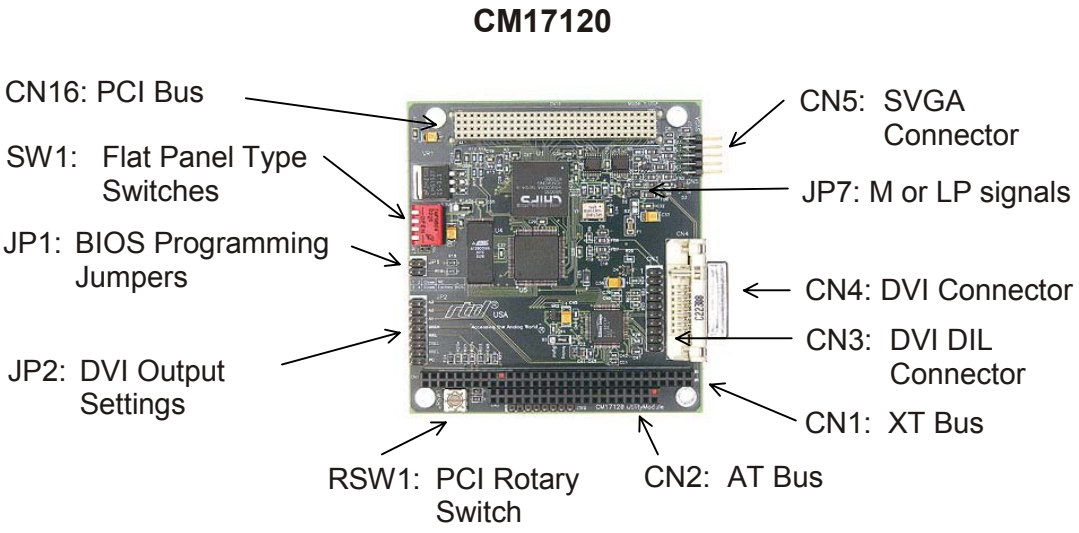
The following sections describe connectors of the CM17120 Super VGA utilityModules.

4.1. Finding Pin 1 on the Connectors

A square solder pad visible on the bottom of the PC board indicates pin 1 on the connectors.

4.2. Component locations

The figure below shows locations of major components, including connectors.



4.3. Connectors

Connector	Function	Dimension
CN5	SVGA analog output	10 pin
CN4	Standard DVI Flat panel output	24+5 pin
CN3	DVI Flat panel	20 pin
CN2, CN1	AT/XT bus[2]	64+32 pin
CN16	PCI bus	120 pin
JP1	BIOS programming jumper	4 pin
JP2	DVI output configuration jumper	16 pin
RSW1	PCI rotary switch	Rotary switch
SW1	Flat panel type switches	4 DIP switches

4.4. Fuses

Fuse	Value	Value and signal
F1	1A	+5V

4.5. Connector pinouts

VGA Video Connector, CN5			
DIL Pin	**Signal**	**Function**	**DB15 Pin**
1	VSYNC	Vertical sync	14
2	HSYNC	Horizontal sync	13
3	DDC CLK	Power supply	15
4	RED	Red signal	1
5	DDC DATA	Monitor detect	12
6	GREEN	Green signal	2
7	+5V	Clock	9
8	BLUE	Blue signal	3
9	GND	Ground	5, 6, 7
10	GND	Ground	10, 8
-	NC	No Connect	4,11

Shown another way, the pinout of this connector (facing the pins) is:

[2] Not used for the operation of the utilityModules. Used only to pass through ISA signals for other board on the stack.

1	VSYNC	HSYNC	2
3	DDC CLK	RED	4
5	DDC DATA	GREEN	6
7	+5V	BLUE	8
9	GND	GND	10

Note: In our XK-CM37 cable kit, not all ground pins of the DB15 VGA connector are wired to the utilityModules. In a very few cases, a particular monitor will require all ground pins to be connected. In these case, it will be necessary to use a cable with all ground signals connected to the utilityModules.

Note: High-resolution video uses very high-speed signals. For optimum video performance, you should use a short video cable between the module and VGA connector and provide a low-impedance ground between your system and the VGA connector

4.6. Flat Panel Interface, CN3

CN3 is a 20-pin DIL connector, which provides signals to connect Flat Panel Displays.

1	DDC Data-DVI	DDC Clock-DVI	2
3	No Connect	Ground	4
5	T.M.D.S. Clock+	T.M.D.S. Clock-	6
7	T.M.D.S. Clock	Ground (for + 5V)	8
9	+5V-DVI	Ground	10
11	T.M.D.S. Data2+	T.M.D.S. Data2-	12
13	T.M.D.S. Data2	Ground	14
15	T.M.D.S. Data1+	T.M.D.S. Data1-	16
17	T.M.D.S. Data1	T.M.D.S. Data0	18
19	T.M.D.S. Data0+	T.M.D.S. Data0-	20

4.7. DVI Flat Panel Interface, CN4

CN4 is a DVI standard connector to DVI compatible Flat Panel Displays.

Pin	Signal Assigment	Pin	Signal Assigment	Pin	Signal Assigment
1	T.M.D.S. Data2-	9	T.M.D.S. Data1-	17	T.M.D.S. Data0-
2	T.M.D.S. Data2+	10	T.M.D.S. Data1+	18	T.M.D.S. Data0+
3	T.M.D.S. Data2 Shield	11	T.M.D.S. Data1 Shield	19	T.M.D.S. Data0 Shield
4	No Connect	12	No Connect	20	No Connect
5	No Connect	13	No Connect	21	No Connect
6	DDC Clock	14	+5V Power	22	T.M.D.S. Clock Shield
7	DDC Data	15	Ground (return for +5V, HSync and VSync)	23	T.M.D.S. Clock+
8	Analog Vertical Sync	16	No Connect	24	T.M.D.S. Clock-
C1	Analog Red	C2	Analog Green	C3	Analog Blue
C4	Analog Horizontal Sync	C5	Analog Ground (analog R,G & B return)		

4.8. Jumpers and Switches

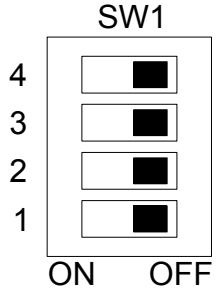
JP1	
Pin	**Description**
1-2	User VGA BIOS*
3-4	Factory BIOS (32KB)

JP2 (DVI output settings)		
Pin	**Jumper**	**Description**
A3,A2,A1*	1-2 = Low	These inputs are used to select the de-skewing setting for the input bus.
Low	2-3 = High	
DKEN*	1-2 = Low	A3, A2, A1 is used as the de-skewing setting. The de-skewing increments are 260psec.
High	2-3 = High	Default de-skewing is used
ISEL*	1-2 = Low	I^2C interface is inactive
Low	2-3 = High	I^2C interface is active
BSEL*	1-2 = Low	12-bit input mode
High	2-3 = High	24-bit input mode
DSEL*	1-2 = Low	Single edge mode. Falling edge of the IDCK+ clock is used to latch data.
Low	2-3 = High	Dual edge mode
EDGE*	1-2 = Low	
Low	2-3 = High	
PD	1-2 = Low	DVI Output power down.
Open	2-3 = High	Normal operation

* User should not change this setting

SW1					
#	**4**	**3**	**2**	**1**	**Flat panel type description**
2	ON	ON	ON	OFF	1280x1024
6	ON	OFF	ON	OFF	640x480
7	ON	OFF	OFF	ON	1024x768
8	ON	OFF	OFF	OFF	800x600

DIP switch SW1 layout: (all switch in OFF position)



Chapter 5. Using the utilityModules

5.1. VGA

The video interface of the CM17110/CM17120 Super VGA utilityModules appears as a standard Super VGA card. It will support interlaced and non-interlaced analog RGB VGA monitors, but does not support digital RGB monitors.

The module support the following general video modes:

- Super VGA
- VGA
- XGA
- SXGA
- UXG
- Quarter VGA 320x240, 320x200
- Monochrome

For a complete list of supported video modes, please refer to the Chips and Technologies 69030 datasheet. (See the following section.)

5.2. Chips & Technologies Documentation

Due to the complexity of the Chips & Technologies 69030 VGA controller chip, it is impossible for us to reproduce all programming information in this manual. If you will be doing in-depth programming of the VGA controller, we suggest you obtain the 69030 datasheet from the manufacturer.

The 69030 datasheet is available on-line in electronic format as an Adobe Acrobat (.PDF) file on the Asiliant Technologies website.

www.asiliant.com

5.3. Driver Disk

The driver disk included with the CM17110/CM17120 Super VGA utilityModules contains drivers for.

- Windows 95/98
- Windows NT 4.0
- Windows 2000
- Windows XP

Although the CM17110/CM17120 Super VGA utilityModules are compatible with generic windows VGA drivers, the supplied drivers will provide optimal performance.

Chapter 6. Software installation

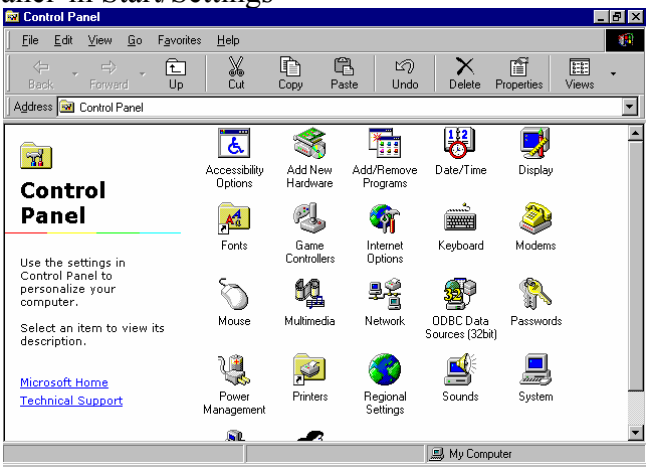
This chapter contains information on:

- Software installation
- Control panel application

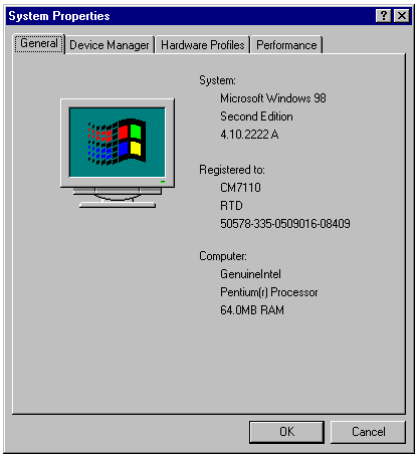
6.1. Software installation

6.1.1. Windows 98

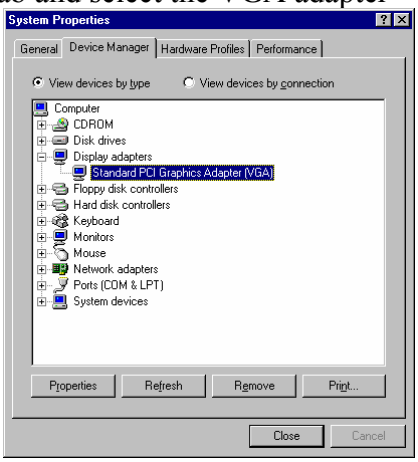
1. Select 'Control Panel' in Start/Settings



2. Select 'System'



3. Select 'Device Manager' tab and select the VGA adapter



4. Click Properties

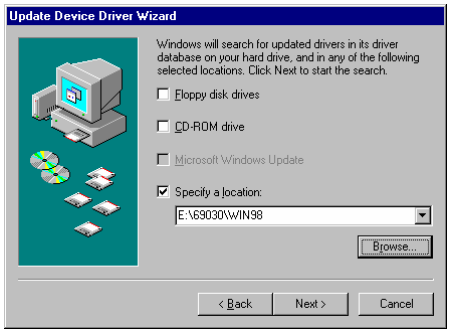
5. Click 'Update Driver..."

Update Device Driver Wizard
This wizard searches for updated drivers for:
Standard PCI Graphics Adapter (VGA)
A device driver is a software program that makes a hardware device work.
Upgrading to a newer version of a device driver may improve the performance of your hardware device or add functionality.
< Back
Next >
Cancel

6. Click 'Next'

Update Device Driver Wizard
What do you want Windows to do?
Search for a better driver than the one your device is using now. (Recommended)
Display a list of all the drivers in a specific location, so you can select the driver you want.
< Back
Next >
Cancel

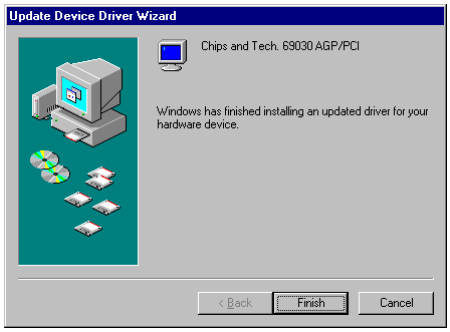
7. Select 'Search....' and click 'Next'


Update Device Driver Wizard
Windows will search for updated drivers in its driver database on your hard drive, and in any of the following selected locations. Click Next to start the search.
Floppy disk drives
CD-ROM drive
Microsoft Windows Update
Specify a location:
E:\69030\WIN98
Browse...
< Back
Next >
Cancel

8. Select 'Specify location', select the Windows 98 driver folder and click 'Next'

Update Device Driver Wizard
Windows driver file search for the device:
Chips and Tech. 69030 AGP/PCI
Windows is now ready to install the best driver for this device. Click Back to select a different driver, or click Next to continue.
Location of driver:
E:\69030\WIN98\CHIPS98.INF
< Back
Next >
Cancel

9. Click 'Next'


Update Device Driver Wizard
Chips and Tech. 69030 AGP/PCI
Windows has finished installing an updated driver for your hardware device.
< Back
Finish
Cancel

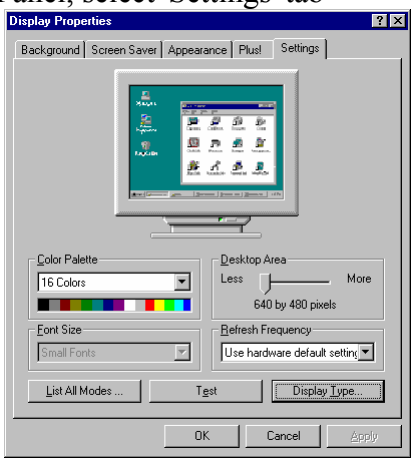
10. Click 'Finish'

System Settings Change
To finish setting up your new hardware, you must restart your computer.
Do you want to restart your computer now?
Yes
No

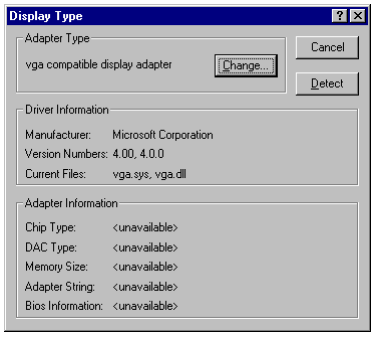
11. Click 'Yes' to restart the computer

6.2. Windows NT 4.0

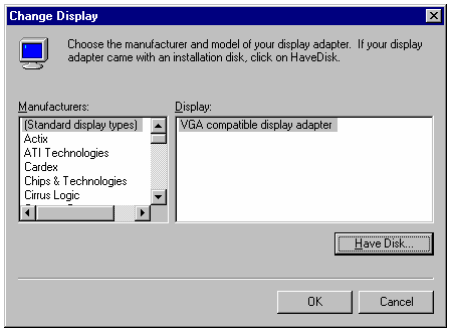
1. Start 'Display' in Control Panel, select 'Settings' tab



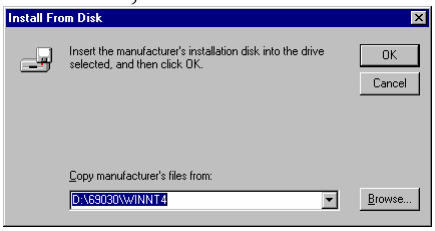
2. Click 'Change'



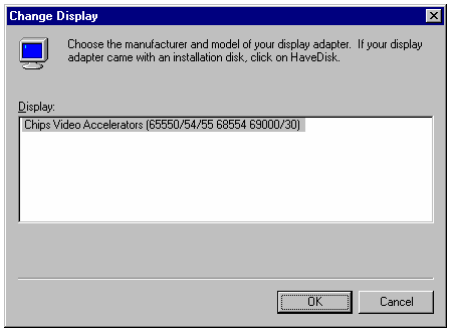
3. Click 'Have Disk...'



4. Set Windows NT 4.0 drivers folder, and click 'OK'



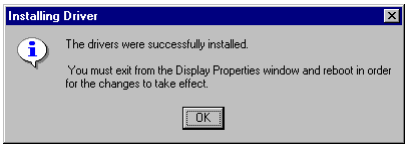
5. Click 'OK'


Change Display
Choose the manufacturer and model of your display adapter. If your display adapter came with an installation disk, click on HaveDisk.
Display:
Chips Video Accelerators (65550/54/55 68554 69000/30)
OK
Cancel

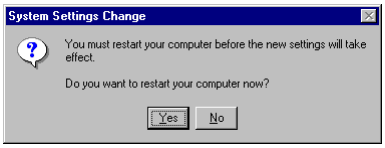
6. Click 'OK'

Third-party Drivers.
You are about to install a third-party driver.
This driver was written by the hardware vendor, and is only provided here as a convenience. For any problem with this driver, please contact the hardware vendor.
Do you wish to proceed ?
Yes
No

7. Click 'Yes'


Installing Driver
The drivers were successfully installed.
You must exit from the Display Properties window and reboot in order for the changes to take effect.
OK

8. Close display properties

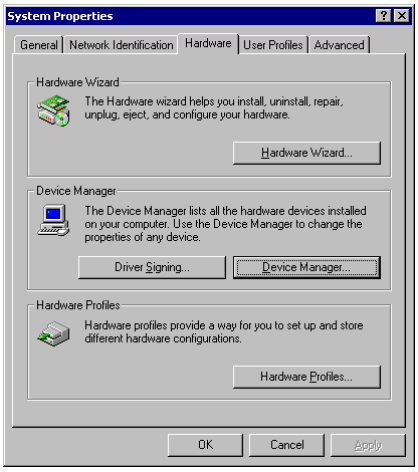

System Settings Change
You must restart your computer before the new settings will take effect.
Do you want to restart your computer now?
Yes
No

9. Click 'Yes' to restart the computer

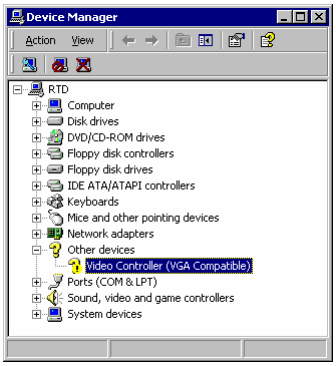
6.3. Windows 2000

1. Select 'Control Panel' in Start/Settings

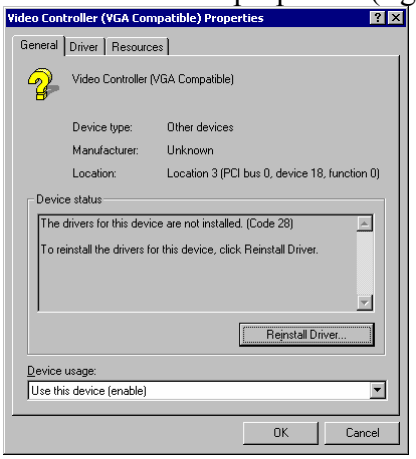
2. Select 'System'


System Properties
General
Network Identification
Hardware
User Profiles
Advanced
Hardware Wizard
The Hardware wizard helps you install, uninstall, repair, unplug, eject, and configure your hardware.
Hardware Wizard...
Device Manager
The Device Manager lists all the hardware devices installed on your computer. Use the Device Manager to change the properties of any device.
Driver Signing...
Device Manager...
Hardware Profiles
Hardware profiles provide a way for you to set up and store different hardware configurations.
Hardware Profiles...
OK
Cancel
Apply

3. Click 'Device Manager...' button



4. Select 'Video controller...' and select device properties (right mouse button)



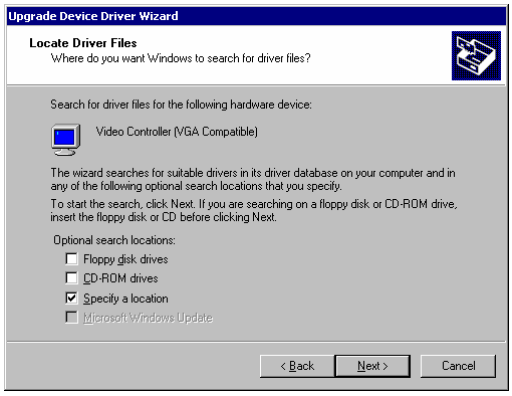
5. Click 'Reinstall driver...'

Upgrade Device Driver Wizard
Welcome to the Upgrade Device Driver Wizard
This wizard helps you upgrade a device driver for a hardware device.
To continue, click Next.
< Back
Next >
Cancel

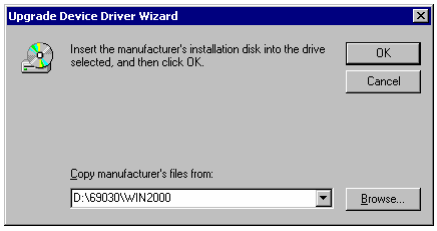
6. Click 'Next'

Upgrade Device Driver Wizard
Install Hardware Device Drivers
A device driver is a software program that enables a hardware device to work with an operating system.
This wizard upgrades drivers for the following hardware device:
Video Controller (VGA Compatible)
Upgrading to a newer version of a device driver may add functionality to or improve the performance of this device.
What do you want the wizard to do?
Search for a suitable driver for my device (recommended)
Display a list of the known drivers for this device so that I can choose a specific driver
< Back
Next >
Cancel

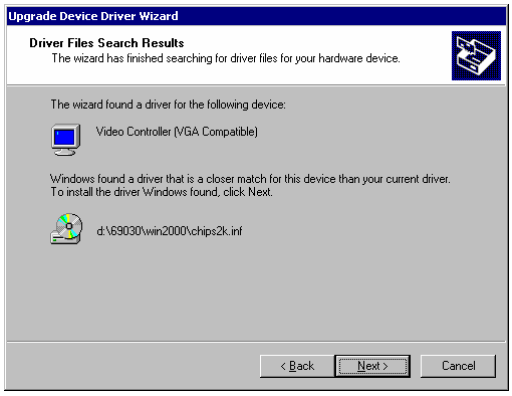
7. Select 'Search for...' and click 'Next'


Upgrade Device Driver Wizard
Locate Driver Files
Where do you want Windows to search for driver files?
Search for driver files for the following hardware device:
Video Controller (VGA Compatible)
The wizard searches for suitable drivers in its driver database on your computer and in any of the following optional search locations that you specify.
To start the search, click Next. If you are searching on a floppy disk or CD-ROM drive, insert the floppy disk or CD before clicking Next.
Optional search locations:
Floppy disk drives
CD-ROM drives
Specify a location
Microsoft Windows Update
< Back
Next >
Cancel

8. Select 'Specify location' and click 'Next'



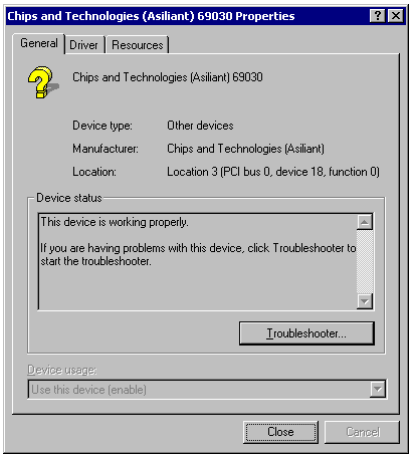
9. Specify the Windows 2000 driver location and click 'OK'


Upgrade Device Driver Wizard
Driver Files Search Results
The wizard has finished searching for driver files for your hardware device.
The wizard found a driver for the following device:
Video Controller (VGA Compatible)
Windows found a driver that is a closer match for this device than your current driver.
To install the driver Windows found, click Next.
d:\69030\win2000\chips2k.inf
< Back
Next >
Cancel

10. Click 'Next'

Upgrade Device Driver Wizard
Completing the Upgrade Device Driver Wizard
Chips and Technologies (Asiliant) 69030
Windows has finished installing the software for this device.
To close this wizard, click Finish.
< Back
Finish
Cancel

11 Click 'Finish'

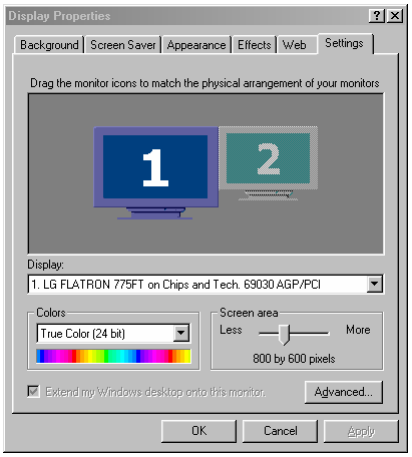


12 Click 'Close', close device manager, close Control Panel and restart the computer

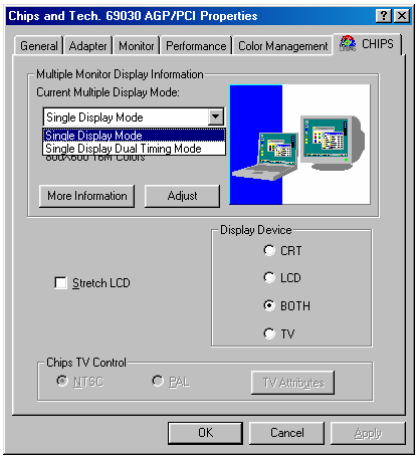
6.4. Control Panel application

In control panel application you can select screen resolution, CRT and Flat Panel operation mode. This application available only in Windows platform.

Set screen resolution:



CRT and Flat Panel operation mode:



6.5. ChipsVGA DOS utility

ChipsVGA utility can set CRT and Flat Panel operation mode in DOS.

Available modes:

- CRT — CRT only mode, VDDSW off — chipsvga.exe crt
- LCD — LCD only mode, CRT sync off — chipsvga.exe lcd
- BOTH — both LCD and CRT are active — chipsvga.exe both

Chapter 7. Flash BIOS programming

The CM17110/CM17120 card supports in-circuit flash BIOS reprogramming through VGA chip, the reprogramming algorithm uses only the PCI bus.

WARNING: do not reset or switch off the computer while programming in progress!

You can use BIOSPROG.EXE program to reprogram the flash BIOS.

7.1. Usage of the BIOSPROG.EXE:

BIOSPROG.EXE is a DOS-DPMI32 program. You have to use MS-DOS 6.22 or compatible dos with himem.sys.

7.1.1. Read and save BIOS image to disk:

1. Start BIOSPROG.EXE with a filename to save BIOS image to disk:

A:\BIOSPROG.EXE oldbios.dat

7.2.Reprogram the BIOS:

1. Start BIOSPROG.EXE with two filenames:

   A:\BIOSPROG.EXE newbios.dat oldbios.dat

2. BIOSPROG.EXE search CM17110/CM17120 in the PCI bus
3. BIOSPROG.EXE saves current BIOS to oldbios.dat
4. when BIOSPROG.EXE prompt, put JP1 WE jumper on the board
5. BIOSPROG.EXE reprogram the flash BIOS (displays dot characters while programming)
6. when BIOSPROG.EXE prompt, remove JP1 WE jumper
7. switch off the computer
8. switch on the computer

Chapter 8. Troubleshooting

Q: The computer does not start after installing the card (no VGA signal and beeps)

A: Check that the card is correctly plugged into the slot and check the PCI device selector rotary switch. (RSW1)

Q: The computer starts but no video signal

A: Check that the card is correctly plugged into the slot, and check the PCI device selector rotary switch.

Q: BIOSPROG stopped and display: Couldn't initialize DPMI32VM.OVL

A: Check config.sys, you have to use himem.sys, see sample config.sys and autoexec.bat in driver disk.

Q: Computer start but no VGA signal or computer doesn't start

A: The computer may not support BIOS larger than 32 KByte. Switch factory BIOS and try again.

Q: Computer start but no picture in LCD.

A: Check LCD settings (SW1, JP7, JP6)

Q: Computer start but no picture in LCD, analog VGA picture and LCD settings are correct.

A: Check LCD output voltage, possible fuse or cabling problem. CM17110/CM17120 contains fuses to protect output voltage signals.

Chapter 9. Flat Panel connection example (CM17110 only)

Example connection between CM17110 flat panel interface and NEC NL6448AC20-06 flat panel.

9.1. Cable connection:

Example flat panel cable connection			
CM17110 CN18	**CM17110 Signal**	**NEC CN31**	**NEC Signal**
1	VDDSW	28, 29	Vcc
2	VBKLSW		
3	Vee(+)		
4	Vee(-)		
5	ENABKL		
6	GND	1	GND
7	M(Data Enable)		
8	Blank*/DE	27	DE (Data Enable)
9	GND	5	GND
10	LP (HSync)	3	HSync
11	FLM (VSync)	4	VSync
12	GND	12	GND
13	SHFCLK	2	CLK (Dot clock)
14	GND	19	GND
15	PNL0		
16	PNL1		
17	PNL2	20	B0 (Blue data LSB)
18	PNL3	21	B1
19	PNL4	22	B2
20	PNL5	23	B3
21	PNL6	24	B4
22	PNL7	25	B5 (Blue data MSB)
23	PNL8		4
24	PNL9		4
25	PNL10	13	G0 (Green data LSB)
26	PNL11	14	G1
27	PNL12	15	G2
28	PNL13	16	G3
29	PNL14	17	G4
30	PNL15	18	G5 (Green data MSB)
31	GND	26	GND
32	PNL16		
33	PNL17		
34	PNL18	6	R0 (Red data LSB)
35	PNL19	7	R1
36	PNL20	8	R2
37	PNL21	9	R3
38	PNL22	10	R4
39	PNL23	11	R5 (Red data MSB)
40	GND	31	DPS (Scan direction select)

9.2. Panel switches:

JP7: 1-2 short

Chapter 8 Return Policy and Warranty SW1: 4:ON, 3:OFF, 2:ON, 1:OFF Type 6, 640x480 18-Bit TFT Color

Chapter 10. Return Policy and Warranty

10.1. Return Policy

If you wish to return a product to the factory for service, please follow this procedure:

Read the Limited Warranty to familiarize yourself with our warranty policy.

Contact the factory for a Return Merchandise Authorization (RMA) number.

Please have the following available:

- Complete board name
- Board serial number
- A detailed description of the board's behavior

List the name of a contact person, familiar with technical details of the problem or situation, **along with their phone and fax numbers, address, and e-mail address** (if available).

List your shipping address!!

Indicate the shipping method you would like used to return the product to you.
We will not ship by next-day service without your pre-approval.

Carefully package the product, using proper anti-static packaging.

Write the RMA number in large (1") letters on the outside of the package.

Return the package to:

RTD Embedded Technologies, Inc.
103 Innovation Blvd.
State College PA 16803-0906
USA

10.2. Limited Warranty

RTD Embedded Technologies, Inc. warrants the hardware and software products it manufactures and produces to be free from defects in materials and workmanship for one year following the date of shipment from RTD Embedded Technologies, INC. This warranty is limited to the original purchaser of product and is not transferable.

During the one year warranty period, RTD Embedded Technologies will repair or replace, at its option, any defective products or parts at no additional charge, provided that the product is returned, shipping prepaid, to RTD Embedded Technologies. All replaced parts and products become the property of RTD Embedded Technologies. Before returning any product for repair, customers are required to contact the factory for an RMA number.

THIS LIMITED WARRANTY DOES NOT EXTEND TO ANY PRODUCTS WHICH HAVE BEEN DAMAGED AS A RESULT OF ACCIDENT, MISUSE, ABUSE (such as: use of incorrect input voltages, improper or insufficient ventilation, failure to follow the operating instructions that are provided by RTD Embedded Technologies, "acts of God" or other contingencies beyond the control of RTD Embedded Technologies), OR AS A RESULT OF SERVICE OR MODIFICATION BY ANYONE OTHER THAN RTD Embedded Technologies. EXCEPT AS EXPRESSLY SET FORTH ABOVE, NO OTHER WARRANTIES ARE EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FIT-NESS FOR A PARTICULAR PURPOSE, AND RTD Embedded Technologies EXPRESSLY DISCLAIMS ALL WARRANTIES NOT STATED HEREIN. ALL IMPLIED WARRANTIES, INCLUDING IMPLIED WARRANTIES FOR MECHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO THE DURATION OF THIS WARRANTY. IN THE EVENT THE PRODUCT IS NOT FREE FROM DEFECTS AS WARRANTED ABOVE, THE PURCHASER'S SOLE REMEDY SHALL BE REPAIR OR REPLACEMENT AS PROVIDED ABOVE. UNDER NO CIRCUMSTANCES WILL RTD Embedded Technologies BE LIABLE TO THE PURCHASER OR ANY USER FOR ANY DAMAGES, INCLUDING ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, EXPENSES, LOST PROFITS, LOST SAVINGS, OR OTHER DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PRODUCT.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR CONSUMER PRODUCTS, AND SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

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State College PA 16803-0906
USA
Our website: www.rtd.com